REMARKS

Applicants appreciate the thorough examination of the present application as evidenced by the final Office Action (Final Action) dated January 7, 2003. Claims 1-3, 11-26 and 34-46 are pending in the present application. Applicants appreciate the indication that claims 1-3 and 11-23 are allowed. Applicants further appreciate the indication that claims 25, 26, and 35-46 contain allowable subject matter. Claims 24 and 34 stand rejected under 35 U.S.C. § 102(e). Applicants address the concerns raised by the Examiner herein below.

I. Claim Amendments

Applicants have amended claims 2, 14, 25, and 37 in order to better conform the claim language to U.S. patent practice and to correct a typographical error. More specifically, these claims have been amended to reflect a proper alternative to Markush claiming and to correct a typographical error by replacing "halfnium" with "hafnium."

Applicants have amended claims 24, 26, 34, and 38 to further clarify the subject matter of the present invention. Claims 24 and 34 have been amended to recite that "M is selected from the group consisting of scandium (Sc), lanthanum (La), actinium (Ac), titanium (Ti), zirconium (Zr), hafnium (Hf), and rutherfordium (Rf)." Support for this amendment can be found in the claims as originally filed where each element recited is a Group IIIB or Group IVB element of the periodic table.

Claims 26 and 38 have been amended to delete the recitation "selected from yttrium (Y) or". Support for this amendment can be found in the claims as originally filed.

Applicants have added new claims 47 and 48. Claim 47 is directed to a specific embodiment wherein a non-crystalline oxide is represented by the formula $(Al_2O_3)_3(La_2O_3)$ (III). Support for new claim 47 can be found in claim 26 as originally filed and in the specification at page 5, lines 19-23. Claim 48 is directed to a specific embodiment wherein a field effect transistor comprises an integrated circuit substrate having a first surface, source and drain regions in the substrate at the first surface in a spaced apart relationship, and a gate insulating layer on the substrate at the first surface between the spaced apart source and drain regions, the gate insulating layer comprises a non-crystalline oxide represented by the formula

$(Al_2O_3)_3(La_2O_3)$. Support for new claim 48 can be found in claim 38 as originally filed and in the specification at page 12, lines 22-25.

Thus, Applicants respectfully submit that no new matter has been added to the present application and respectfully request entry of these amendments.

II. Rejection Under 35 U.S.C. § 102(e)

Claims 24 and 34 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Aguilar et al. ("Aguilar") from Journal of the European Ceramic Society vol. 20. The Final Action states that Aguilar illustrates a non-crystalline oxide represented by the formula (I):

$$(Al_2O_3)_j(M_nO_m)_k$$

and, among other things, the formula is $(Al_2O_3)_1(Y_2O_3)$ or Y_2O_3-Al_2O_3 and that the system Y_2O_3-Al_2O_3 can be used for coatings for semiconductor technologies. *See* page 2, Final Action.

As discussed above in Section I, Applicants have amended claims 24 and 34 to recite that "M is selected from the group consisting of scandium (Sc), lanthanum (La), actinium (Ac), titanium (Ti), zirconium (Zr), hafnium (Hf), and rutherfordium (Rf)." Yttrium is not recited in the claims. Thus, this amendment obviates the rejection under 35 U.S.C. § 102(e).

Accordingly, Applicants respectfully submit that claims 24 and 34 are patentable under 35 U.S.C. § 102(e) in view of Aguilar and request that this rejection be withdrawn.

III. Allowable Subject Matter

Applicants appreciate the indication that claims 25, 26, and 35-46 contain allowable subject matter. Applicants have amended the rejected base claims, claims 24 and 34, as discussed above. Applicants believe that these amendments render the base claims patentable, as well as claims 25, 26, and 35-46 which are dependent therefrom, respectively.

IV. Conclusion

In view of the foregoing remarks, Applicants respectfully request that all outstanding rejections to the claims be withdrawn and that a Notice of Allowance be issued in due course.

Any questions that the Examiner may have should be directed to the undersigned, who may be reached at (919) 854-1400.

Respectfully submitted,

Shawna Cannon Lemon
Registration No. P-53,888

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PATENT TRADEMARK OFFICE

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on March 5, 2003.

Vickie Diane Prior
Date of Signature: March 5, 2003

Version With Markings To Show Changes Made

In the Claims:

Please amend claim 2 as follows.

2. (Amended) The oxide according to Claim 1, wherein A is aluminum (Al), B is tantalum (Ta), M is hafnium **[selected from halfnium]** (Hf) or zirconium (Zr), n is 1, m is 2, and x is less than 0.25.

Please amend claim 14 as follows.

14. (Amended) The field effect transistor according to Claim 11, wherein A is aluminum (Al), B is tantalum (Ta), M is **[selected from halfnium]** hafnium (Hf) or zirconium (Zr), n is 1, m is 2, and x is less than 0.25.

Please amend claim 24 as follows.

24. (Twice amended) A non-crystalline oxide represented by the formula (II):

$$(Al_2O_3)_j(M_nO_m)_k \qquad (II)$$

wherein:

Al is aluminum;

O is oxygen;

M is **[an element]** selected from the group consisting of scandium (Sc), lanthanum (La), actinium (Ac), titanium (Ti), zirconium (Zr), hafnium (Hf), and rutherfordium (Rf) **[either Group IIIB or Group IVB of the periodic table]**; and

j ranges from about 0.5 to about 4.5; k is equal to about 1; n ranges from about 0.5 to about 2.5, and m ranges from about 1.5 to about 3.5.

Please amend claim 25 as follows.

25. (Amended) The oxide according to Claim 24, wherein M is **[selected from halfnium]** hafnium (Hf) or zirconium (Zr), n is 1, m is 2, j is 4, and k is 1.

Please amend claim 26 as follows.

26. (Amended) The oxide according to Claim 24, wherein M is **[selected from yttrium (Y) or]** lanthanum (La), n is 2, m is 3, j is 3, and k is 1.

Please amend claim 34 as follows.

34. (Twice amended) A field effect transistor comprising:

an integrated circuit substrate having a first surface;

source and drain regions in said substrate at said first surface in a spaced apart relationship; and

a gate insulating layer on said substrate at said first surface between said spaced apart source and drain regions, said gate insulating layer comprising a non-crystalline oxide represented by the formula (II):

$$(Al_2O_3)_j(M_nO_m)_k \qquad (II)$$

wherein:

Al is aluminum, O is oxygen, M is **[an element]** selected from the group consisting of scandium (Sc), lanthanum (La), actinium (Ac), titanium (Ti), zirconium (Zr), hafnium (Hf), and rutherfordium (Rf) **[either Group IIIB or Group IVB of the periodic table]**, j ranges from about 0.5 to about 4.5, k is equal to about 1, n ranges from about 0.5 to about 2.5, and m ranges from about 1.5 to about 3.5.

Please amend claim 37 as follows.

37. (Amended) The field effect transistor according to Claim 34, wherein M is **[selected from halfnium]** hafnium (Hf) or zirconium (Zr), n is 1, m is 2, j is 4, and k is 1.

Please amend claim 38 as follows.

38. (Amended) The field effect transistor according to Claim 34, wherein M is **[selected from yttrium (Y) or]** lanthanum (La), n is 2, m is 3, j is 3, and k is 1.

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